



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

H.A

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,893	08/25/2003	Shinichi Nakamura	9319H-000546	3554
27572	7590	07/31/2006	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			HSIEH, SHIH WEN	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 07/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/647,893

Applicant(s)

NAKAMURA, SHINICHI

Examiner

Shih-wen Hsieh

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
4a) Of the above claim(s) 10-24 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 2, 5, 8 and 9 is/are rejected.
7) ☒ Claim(s) 3, 4, 6 and 7 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8-25-03; 9-30-04. (5/27/05)

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: IDS dated 5-27-05.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of group I in the reply filed on July 14, 2006 is acknowledged. The traversal is on the ground(s) that all groups of claims are sufficient related to each other that an undue burden would not be placed upon the Examiner by maintaining all groups in a single application. This is not found persuasive because per MPEP 608.01(n) III. Infringement test, a paragraph of which is repeated below to answer Applicant's argument:

The fact that a dependent claim which is otherwise proper might relate to a separate invention which would require a separate search or be separately classified from the claim on which it depends would not render it an improper dependent claim, although it might result in a requirement for restriction.

The requirement is still deemed proper and is therefore made FINAL.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

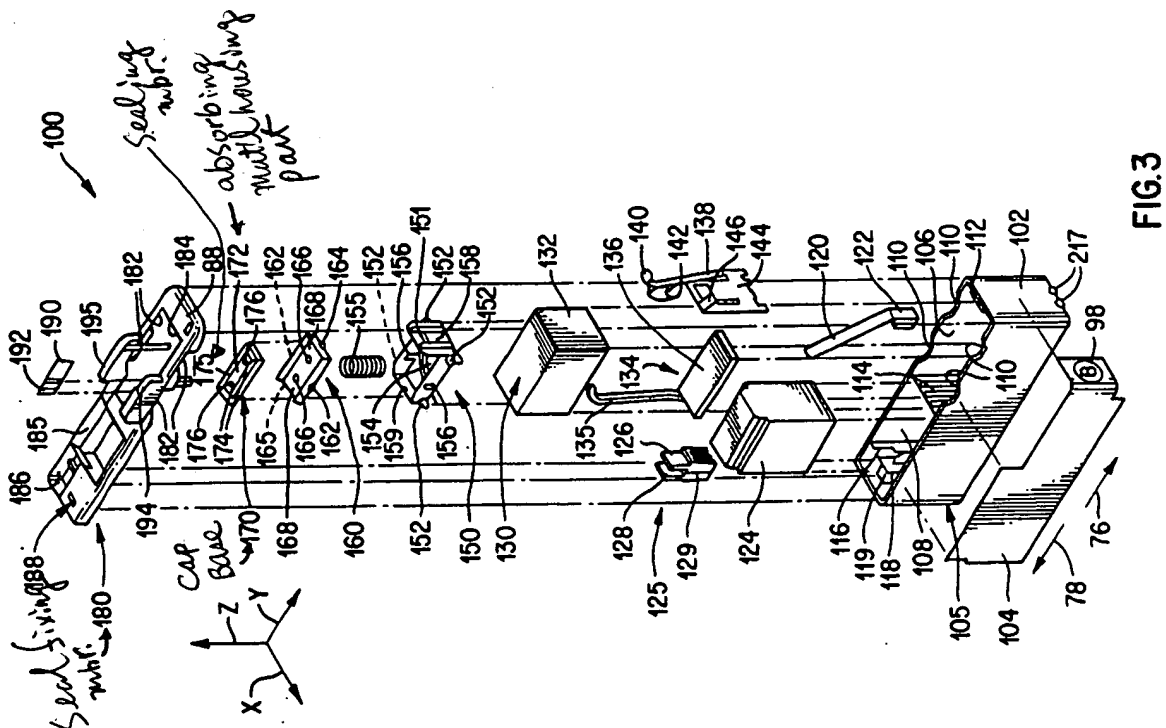
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murcia et al. (US Pat. No. 6,481,822 B2) in view of Takahashi et al. (US Pat. No. 6,364,449 B1).

In regard to:

Claim 1:

Murcia et al. teach in their fig. 3 (shown below):



A head cap comprising:
a cap base (170), refer to col. 9, lines 28-33;
an absorbing material housing part which is formed on a surface (172) of said cap base.

The device of Murcia et al. DIFFERS from claim 1 in that it does not teach:
a function liquid absorbing material which is disposed inside said absorbing material housing part.

An absorbing material (certainly, an absorbing material is able to absorb liquid) disposed inside of a capping member for absorbing liquid ejected from, e.g., an ink jet head and in the meantime maintaining the moisture within the capping member's environment is a well known practice in ink jet printer field.

Nevertheless, Takahashi et al. teach a capping device (16 and 17) in their fig. 1 and 2, and a detail of which shown in fig. 7. In fig. 7, Takahshi et al. teach:

an ink absorbing member (16c, corresponding to the function liquid absorbing material in this claim) is disposed on the inner bottom (corresponding to 172 in Murcia et al's cap lip member 170) of the cap member (16b, corresponding to Murcia et al's 170), refer to col. 13, lines 53-65.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Murcia et al. to include a porous material in the cap base functioned as a liquid absorber as taught by Takahashi et al. for the purpose of absorbing liquid ejected from a liquid ejected head and in the meantime maintaining a moisturized environment within the cap.

The device of Murcia et al. as modified in view of Takahashi et al. DIFFERS from claim 1 in that it does not teach:

an absorbing material urging member which urges the function liquid absorbing material.

Takahashi et al. in the device of Murcia et al. as modified in view of Takahashi et al. further teaches a retainer (16d, fig. 7), which functions as the urging member in this claim, refer to col. 13, lines 64-67.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Murcia et al. as modified in view of Takahashi et al. to include a retainer as further taught by Takahashi et al. for the purpose of retaining the porous material within the cap base.

Murcia et al. in the device of Murcia et al. as modified in view of Takahashi et al. further teaches:

a sealing member (175, Murcia et al. called it a lip member, actually in a capping device, it is the lip member, which abuts an ejection surface of a liquid ejection head and hermetically seal it, therefore, the lip member is also called a sealing member based on its function—"to seal") which is formed so as to come into intimate contact with a nozzle surface of a function liquid droplet ejection head, refer to col. 9, lines 46-52, and lines 60-62; Note: the orifice plate in line 51 is the ejection surface of a liquid ejection head discussed above; and

a seal fixing member (180, fig. 3) which fixes said sealing member to said cap base, refer to col. 9, lines 55-62 (col. 9, lines 9-46 is also recommended to look at so as

Art Unit: 2861

to see when the cover covers the unit 100, the cover 180 is actually pressed onto the unit and in the meantime presses the cap at least through the fitting of the followers 152 into the slots 110, and the restoring force of the spring 155 also contributes a tightly fit of the cap unit against the cover.

The device of Murcia et al. as modified in view of Takahashi et al. DIFFERS from claim 1 in that it does not teach:

wherein said sealing member is fixed to said cap base in a state in which said absorbing material urging member is urged.

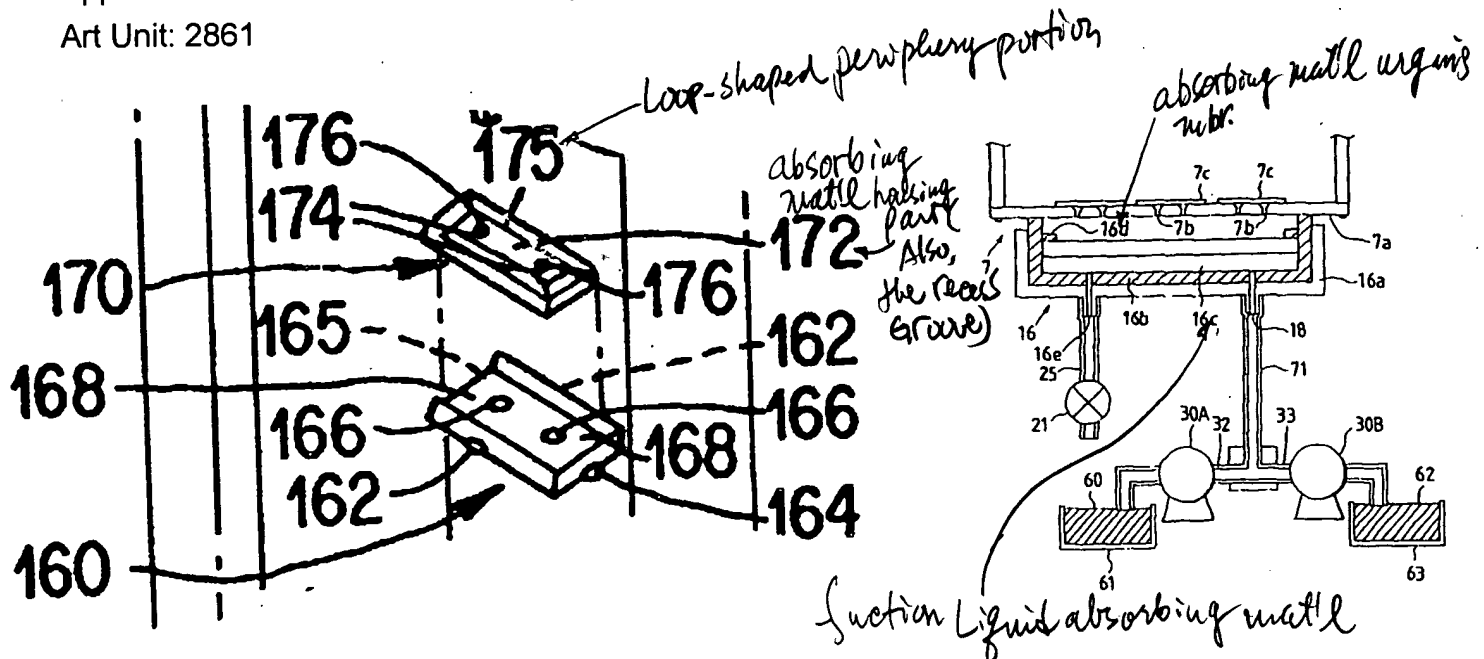
Takahashi et al. in the device of Murcia et al. as modified in view of Takahashi et al. further teaches:

a retainer (16d, fig.7) for retaining the ink-absorbing material (16c) on the inner bottom of the cap member (16b), refer to col. 13, lines 64-67.

Therefore it would have been an obvious matter that once the retainer (16d) is added on top of the ink-absorbing material (16c), the position of the retainer (16d) with respect to the position of the ink-absorbing material (16c) a retaining force will be derived from the retainer and applied to the ink-absorbing material due to the positions' relationship between the retainer and the ink-absorbing material. This retaining force is actually an urging force, which will urge and keep the ink-absorbing material well within the bottom of the cap member (16b).

Claim 2:

Art Unit: 2861



The device of Murcia et al. as modified in view of Takahashi et al. further teaches:

said absorbing material housing part comprises a loop-shaped peripheral portion which defines a recessed groove and which projects beyond said cap base, said recessed groove being filled with the function liquid absorbing material, and wherein a peripheral portion of said absorbing material urging member is seated on said loop-shaped peripheral portion, refer to the figures above.

Claim 5:

The device of Murcia et al. as modified in view of Takahashi et al. DIFFERS from claim 5 in that it does not teach:

wherein said absorbing material urging member is formed of a stainless steel.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to select a known material such as the one selected by the instant application, since it has been held to be within the general skill of a

worker in the art to select a known material on the basis of its suitability for the intended use, refer to MPEP 2144.07.

Claim 8:

Murcia et al. in the device of Murcia et al. as modified in view of Takahashi et al. further teaches:

a cap holder (160, fig. 3, Murcia et al. called it a cap retainer, a retainer in its sense is equivalent to a cap holder, because retain means hold) which slidably supports said cap base (170) in a direction of close adhesion; and a spring (155, fig. 3) which urges said cap base, with said cap holder serving as a receiver, wherein said cap holder has formed therein a restricting projection part (162, 164 and 165, fig. 3) which restricts a position of said cap base in a slightly inclined state relative to said cap base against said spring, refer to Murcia et al.'s col. 9, lines 9-20.

Claim 9:

Murcia et al. in the device of Murcia et al. as modified in view of Takahashi et al. further teaches:

A liquid droplet ejection apparatus comprising:

a head cap as set forth in claim 1, refer to the rejection to claim 1 discussed above;

the function liquid droplet ejection head (such as the black print head 60);

an approaching and departing mechanism (110 and 152, figs. 3-5) for relatively moving said head cap toward and away from said function liquid droplet ejection head, refer to col. 8, lines 63-67; and 258; 268 in fig. 11.

The device of Murcia et al. as modified in view of Takahashi et al. DIFFERS from claim 9 in that it does not teach:

a suction mechanism for sucking a function liquid from said function liquid droplet ejection head through said head cap which is connected to and adhered to, said head cap.

Takahashi et al. in the device of Murcia et al. as modified in view of Takahashi et al. further teaches:

a suction pump (30, fig .7), which when operates will suck the ink (a type of liquid) out of the cap (16), refer to col. 14, lines 19-38.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Murcia et al. as modified in view of Takahashi et al. to include a suction mechanism as further taught by Takahashi et al. for the purpose of sucking waste ink (liquid) out of the cap, and sending it to a waste ink storage tank (61 or 63) for further disposal.

Allowable Subject Matter

5. Claims 3, 4, 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2861

6. The following is a statement of reasons for the indication of allowable subject matter:

In regard to:

Claims 3 and 4:

The primary reason for the allowance of claims 3 and 4 is the inclusion of the limitation of the absorbing material urging member has a lattice-shaped part, which urges an intermediate portion thereof. It is this limitation found in each of the claims, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

Claims 6 and 7:


The primary reason for the allowance of claims 6 and 7 is the inclusion of the limitations of the sealing member is integrally formed of a loop-shaped urging part which urges said absorbing material urging member; and a loop-shaped fixing part which is fixed to said cap base, and wherein said loop-shaped urging part is formed on a back surface side of said loop-shaped projecting part. It is this limitation found in each of the claims, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.

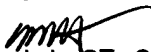
Art Unit: 2861

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, V. Patel can be reached on 571-272-2458. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000. **SHIH-WEN HSIEH**
PRIMARY EXAMINER


Shih-wen Hsien
Primary Examiner
Art Unit 2861

SWH


July 27, 2006